DOCUMENT RESUME

ED 133 158 SE 021 473

AUTHOR	Schmidt, Linda
TITLE	Natural or Organic Foods? [Project ECOLogy ELE Pak, Schmidt Pak].
INSTITUTION	Highline Public Schools, Seattle, Wash.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	[76]
NOTE	36p.; For related documents, see SE 021 438-478
AVAILABLE FROM	Highline Public Schools, Instructional Division, Project ECOLogy ESEA Title III, Bill Guise, Director, 15675 Ambaum Blvd., S.W., Seattle, WA 98166 ($2.50)
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	*Environment; Environmental Education; *Food; *Home Economics; *Instructional Materials; *Nutrition; *Secondary Education; Units of Study (Subject Fields)
IDENTIFIERS	Elementary Secondary Education Act Title III; ESEA Title III; *Organic Foods

ABSTRACT

This is one of a series of units for environmental education developed by the Highline Public Schools. The unit is designed for secondary students in home economics classes. The content of the units focuses on natural and organic foods, characteristics of the foods, and uses of the foods. The seven lessons in this unit are designed to last over a period of two to three weeks. The materials were tried and evaluated; evaluation data may be obtained from the Highline Public Schools. (RH)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED133158

SCHMIDT PAK

NATURAL or ORGANIC FOODS ?

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

by Linda Schmidt

An Environmental Learning Experience for a Specialty Foods class on 11th-12th grade levels. One of many "ELE PAKS" available for all areas.

Project ECOLogy, Title III ESEA
Highline Public Schools
Department of Instruction
P. O. Box 66100
Seattle, WA 98166
Phone: (206) 433-2453

SE 021 473

NATURE KNOWS BEST

PROJECT ECOLOGY TITLE III

EVERYTHING IS CONNECTED TO EVERYTHING ELSE

PROJECT ECOLOGY

THERE IS NO SUCH THING AS A FREE LUNCH

PROJECT ECOLOGY TITLE III

EVERYTHING MUST GO SOME WHERE

PROJECT ECOLOGY TITLE III

The Kids Who Participated in the Pilot Evaluation Program

Laurie Bausano
Allcia Bomber
Debbie Eilertson
Jackie Emery
Jeanette Gresset
Sherry Henry
Sue Jacobs
Irene McIntyre
Denise Montgomery
Cindy Nelson
Tammy Pierce
Chris Seibert
Sue Schulenberger
Wendy Smith
Anita Stach
Debbie Hoeman

The Readers Who Studied, Critiqued & Offered Suggestions & Ideas For Improvement

Jackie Call, Glacier High School, Highline School District
Lois Larson, Evergreen High School, Highline School District
Dr. Steven Flajser, University of Washington
Joyce Hamilton, Edmonds School District

The Author/Teacher Who Developed This Environmental Learning Experience (ELE)

Linda Schmidt Highline High School Home Economics

Evaluation Results Regarding This ELE May Be Obtained by Including This Page and a Self Addressed Stamped Envelope To

Highline Public Schools, District 401
Instructional Division
Project ECOLogy ESEA Title III
Bill Guise, Director
15675 Ambaum Boulevard S. W.
Seattle, WA 98166

CONCEPTUAL OVERVIEW OF THE UNIT

1. Introduction to natural and organic foods
2. Fertilizers, organic and inorganic play an important role in foods.
3. The organic and natural food growers believe pesticides are dangerous, the commercial food growers do not.
4. Food additives play a very important role in our eating habits, yet so many do not want them used.
5. There are no government standards that govern natural and organic foods.
6. Natural and organic food costs are higher than commercial food.
7. The use of typical natural and organic foods and the cooking of them.

NOTES TO THE TEACHER

The seven lessons in this unit are designed to last over a period of 2 to 3 weeks. The lessons all vary in length, and you will have to adjust them to the needs of the class, and the length of time you want to spend on each.

All materials you need are to be included with the kit. The supplies, like food and so on you will have to put together yourself. All resources used are listed at the end of the package, and are all available from the Project ECOLogy office. The two books to be included with the kit are:

"Cooking with Gourmet Grains"

and

"Chemicals Used in Food Processing"

All the necessary transcripts and dittoes are included with each lesson, and are on special paper for you to use.

Throughout the entire unit all the instructions and directions are written in regular type, the information suggested as a guide for the student is written in script.

The beginning taste testing demonstration and the student labs, were not chosen for a reason. What you choose may depend on what is available, what stores you have access to and so on. A cookbook has been included with the kit that will help tremendously in making your decisions. For assistance here, also check the list in the back of the kit that gives stores offering natural and organic foods.

There has been much research that went into the following information. Please keep in mind, I found a lot of contradictory information, and more and more information is coming out daily on these foods. It would be a good idea to keep a file for these foods, so you could periodically update my information.

One point you may want to change in the Pak is that a good percentage of the research is done for the students for you to present. The Pak is designed this way only because of the lack of resources available in most school libraries and community libraries. The Pak is designed to be flexible for any changes you may wish to make along these lines.

The food labs, are set up in the following manner: a unit of four girls will break down into two groups, one A and one B. Each group will have 2 cooking days, one for preparation and one for cooking and eating, like so:

Group A	day 1	preparation day
	day 2	cooking and eating day
Group B	day 3	preparation day
	day 4	cooking and eating day

On the days group A is cooking, etc. group B will be working on an assignment, and vise versa for A when B is cooking. On both meal days the girls in the unit all eat together.

The girls should have a choice from a number of things they would like to cook.

MATERIALS LIST

Bulletin board - a collage of labels, pictures, and words that pertain to natural and organic foods. Make sure the words, natural and organic stand out. Leave up the length of the unit.

Pamphlets and literature gathered from many of the organic and natural food stores. Have enough for a class room set.

Labels - as soon as the unit begins have the students bring in a label from something they recently ate at home. You will need these for Lesson 4. It is a wise idea for you to collect a backlog for the forgetters.

Fertilizer examples - perhaps several empty containers of commercial products for the inorganic. For organic obtain samples of manure - chicken, horse or cow, and put in tightly secured jar.

quart jar
mung beans
necessary demonstration equipment and supplies
paper plates, plastic forks
tagboard

THINGS TO DO

Four days prior to Lesson 7 in front of the class start to grow bean sprouts. Do not tell the class what you are growing. For the next four days follow the instructions for growing them and always do this in front of the class. On the fourth day you will be ready to demonstrate with them.

Make a chart on tagboard of the additives - Lesson 4.

Speaker - arrange to have a representative from the FDA come. Perhaps at the conclusion of the additive section, but would fit nicely into any area.

LESSON 1

CONCEPT: Introduction to natural and organic foods

MATERIALS: Choose three foods - natural, commercial and organic. It is best if all three types utilize the same food and the same preparation. Label each with a number 1 through 3.
Ditto - Which Is Which?
Overhead projector and transparency Reasons for Buying Natural and Organic Foods
Pamphlets

PROCEDURE: Introduce the unit with tasting the three foods. Pass out the dittos and have the students write out their reasons for decisions. Explain that the word commercial on the ditto, means the foods most of us are used to eating purchased through the grocery store.

Discuss class answers.

We are all aware of the growing trend towards organic and natural foods, and it is interesting to find out why it is becoming so popular, but first we must understand what the words mean and the differences between them.

Write "natural" and "organic" on the board. Ask the class to suggest words that describe each, and write them under the appropriate word. When the class feels the lists are complete describe organic:

Organic food is grown in soil enriched only with organic matter, like manure or decomposable garbage. No chemical fertilizers or pesticides are used during the growing process. The insect problem is taken care of by the presence of birds and predator insects. What do I mean by predator? (insects that prey upon other insects) *An example of predator is the praying mantis that preys upon aphids. The weeds are controlled by mulching, which means covering the surrounding ground with grass clippings, shredded leaves or beauty bark and also controlled by the pulling of weeds. Sprays are never used.*

Ask the class to eliminate the words on the board that do not apply to the meaning of organic just described. Erase them and leave the applicable ones on, so the class can see how much they knew.

Move over to the natural food list and read over what the class suggested for descriptive words. Then describe natural foods:

Natural foods are produced only by nature and are eaten as is without any treatment other than washing and hulling or cooking. These foods contain no additives. What are additives? Very briefly, as we will touch on this later - they are substances added to food for such reasons as preservation, color, nutrient addition, etc. Most natural foods are eaten in the whole state, ie. whole wheat and very few undergo processing or pretreatment. Absolutely no fertilizers should be used with the growing of these foods and also no pesticides. Do you have any idea of natural foods we eat almost every day? (raisins, nuts, fresh fruits, and salad vegetables).

Looking at the board again, ask the class to eliminate the words that do not describe natural foods. Carefully point out the words that they are successful with.

Natural foods and organic foods are terms we hear constantly, but they are very loosely used, and are misunderstood by many. There is quite a difference between the two and you must understand this. We will be studying the two terms together as most of the information applies to both. Whenever there is a difference it will be pointed out to you.

Now quickly what are some of the basic differences between the two?

> *Both do not advocate the use of synthetic fertilizers, pesticides, or additives.*
> *Natural - foods produced only by nature, no fertilizers of any kind, foods remain much in their natural state, very little if any processing.*
> *Organic - fertilized organically by manure, decomposable garbage, etc., weeding and insects taken care of by part of nature's plan.*

Refer back to the sheets Which Is Which? Ask students if any would like to change their reasoning for their decisions.

When you think about it, it really is hard to be able to tell if these foods have or have not been grown with organic fertilizer, if pesticides were used or if additives have been used. To the eye, these things are almost impossible to tell. Let's find out more.

Write "Health Food" on the board, ask the class what they think they are. Also, do they have anything to do with the two types of foods we are studying?

It is important that we clarify just exactly what health foods are, as they are quite often mentioned in connection with natural and organic foods. The term health food is actually a misnomer, as there really isn't a type of food one could say is a health food. What it really means is to promote

health through good nutrition. The term health foods has nothing to do with the foods we are learning about, only that either the natural or organic foods would provide a good diet.

We now know what natural and organic foods mean and how health foods fit into the picture. Our study will not be for or against, but we hope to give you enough information so that you will be able to make your own judgement towards these foods. You will be asked at the end of this unit to take a stand, and justify it from the information you have learned.

One point should be made clear, that the information available on these foods is not abundant yet and new information and thoughts are being published all the time. This unit is designed only to give you a basis on which to start.

Distribute the pamphlets, so the students can see how these foods are sold, where some stores are located, information about the food, etc.

Natural and organic farming is perhaps a new idea to some of you and quite interesting, no doubt, but can you foresee any problems these methods might cause?

1. *transporting of huge amounts of organic matter from where it accumulates, ie. manure to the fields or to town gardens, decomposable garbage to fields from city,*
2. *the chances of disease and insect attack may be higher,*
3. *many specialists agree it works well on a small scale, but problems may arise if a large farm is done in this manner. It takes so much more time and work.*

How do these foods fit in with ecology? When you think about it ecology is brought into action right in the growing process - the recycling of garbage and manure, the use of no pesticides, or chemicals at all, no additives, and the conservation of natural nutrients.

Why is it these foods are becoming rapidly popular?

Show transparency Reasons for Buying Organic and Natural Foods

You are now aware of the most common reasons people say they prefer these foods, now let's find out more about these reasons.

WHICH IS WHICH?

The foods you are to taste are numbered 1 through 3. Place the number next to the word you think best fits the food and write out some reasons why. Think hard!

COMMERCIAL

NATURAL

ORGANIC

REASONS FOR BUYING ORGANIC AND NATURAL FOODS

1. No artificial fertilizers - no chemicals added to produce growth.

2. No pesticides - no use of possible poisons.

3. No additives - no chemicals added to destroy nutritional value, no synthetic taste, no synthetic nutrients, and elimination of possible harmful effects.

4. More nutritional - very little or no processing preserves the natural nutrients.

5. Better taste - nature's flavor, not one added by man.

LESSON 2

CONCEPT: Fertilizers, organic and inorganic play an important role in the growing of foods.

MATERIALS: overhead projector
transparency - Organic and Inorganic Fertilizers
Examples of organic and inorganic fertilizers - see Materials List

PROCEDURE: *First let's clarify the difference between organic and inorganic fertilizers:*

organic - manure, decomposable garbage, etc.
inorganic - a chemical form, synthetic

Do natural foods apply to this section?
No, as they grow only in nature's way, with no help. Fertilizers should not be used with growth.

The organic supporter feels that the natural way is a far superior way as you are not disturbing nature's process. Also by use of the organic method you lessen the possibility of poisons that may be present in the inorganic. Most important they feel this method produces a much more nutritious plant.

Those who prefer the inorganic method, will be the first to tell you that this is a short cut method. All organic material must first be broken down into an inorganic state, before the plant can absorb it. The inorganic is more quickly absorbed by the plant.

Show transparency.

There is yet no substantial proof that plants grown with organic fertilizers have a greater nutritional value than those with the inorganic. Evidently, the type of fertilizer used is not a determining factor of the nutritive value. Rather it depends on the plants genetic makeup, the climate, the kind and amount of nutrients available, and the stage of maturity when picked. Actually the maintaining of freshness is the key to maintaining the nutritive value. The inorganic method requires much less labor and is applied in much smaller bulk. Dr. Liston, from U. of W. Food Service and Technology Dept. feels that without our present inorganic method we could never feed the 200 million people in our country without a chemically based agriculture. In fact, we wouldn't be able to feed 1/10 of our population.

As fertilizers are not intentionally used with natural foods, how do you think they are affected?

weaker plants
not such good bearing plants
more susceptible to disease
depends greatly on available soil conditions

You now have some ideas of how both sides think about fertilizers, now let's move on to pesticides.

LESSON 3

CONCEPT: The organic and natural food growers believe pesticides are dangerous, the commercial food growers do not.

MATERIALS: overhead projector
transparency - Reasons for Buying Organic and Natural Foods
pesticides assignment
transparency - Traces of DDT

PROCEDURE: Show the Reasons for Buying Organic and Natural Foods transparency to show the reasons why people shy away from pesticides.

Pesticides are one of the major battles in favor of natural and organic foods. Just what is a pesticide? It is a chemical substance used for the control of plant destroying and disease carrying pests. These substances are found in insect sprays, weed killers, some soil builders, and in certain fertilizers and lawn food, so you can see they are widely used. We are going to spend today in the library finding out more about these pesticides. You are to find an article for or against in a magazine or newspaper. Jot down some important pointers about the article on the provided ditto, as we will be having a debate in class tomorrow.

The next day set up a debate of pro and con teams. Using the previously obtained information and any other the students know of get debate going. It would be wise to be prepared with many suggestions yourself in the case of a lag. Constantly reinforce and pros and the cons. After the discussion add the following points, if they have not already been touched on.

The most publicized chemicals in pesticides are arsenic, mercury and DDT. You have all heard of the traces of these chemicals showing up in our food supply, according to the naturalists and the orga ists. They believe these chemicals are very persistent and are hard to lose in passing from one life cycle to another.

Show transparency on DDT.

As an example we are using DDT. The spray is used to protect the crop from pests. The pests are killed but the spray remains on the crop. Cattle eat the crop or the remains of the harvest. In any of these cycles the DDT does not disappear, it remains and is finally passed on to man. The DDT still remains, and accumulates in the body. It becomes a poison when large amounts are built up.

In the process of using these chemicals many species of animals are dying out. Many feel nature had the perfect system in which every species had a role to nourish or protect or control overpopulation of some other living thing. Man has tampered with this delicate balance and has made the most colossal blunder in his attempt to wipe out the insect population. In the process many beneficial insects have been killed, the birds die out as the food supply is killed. Plus in many cases we are polluting our water supply.

Well nourished and cultivated plants are less susceptible to pests and disease, therefore, there is little need for chemicals. A variety of plants help control insects. Some plants protect others by repelling insects and some attract beneficial insects that prey on harmful bugs. To make this clearer, here are a few examples: garlic, onions and chives keep away aphids; marigolds and nasturtiums keep away a number of pests. Praying mantis and lady bugs eat some harmful pests.

The agriculture experts feel if pesticides were not used, the crop yields would drop to less than 50%, food costs would increase 4 or 5 times and the quality would be poor.

To dispute the DDT controversy, no injury, cancer or death has yet been authoritatively reported. Even the workers in DDT plants have revealed no significant clinical effects. Perhaps the most obvious point is that insurance companies have not required a higher rish coverage for pesticide plant workers, etc. DDT is a frightening word to some of us, but it has very good properties as well. It controlled the world wide spread of malaria.

Those backing the use of pesticides also dispute the ever present factor of these chemicals in the life cycles. To use DDT again, the newer forms used are now organic and last hours, days, weeks, months and rarely years before disappearing. It all depends on the types used and the temperature, moisture, light and presence of organic material and bacteria. It is true the older forms of DDT are the ever present type, and will never decay. It is this one that is still present, not the newer types.

Most of us have heard about the massive fish kills in rivers, lakes, and streams, but some believe that they are not due to pesticides. Statistics say only 1-3% of the fish kills in the past 7 years are due to the irresponsible dumping of sprays or old containers into the water. It is actually the municipal and industrial wastes that account for over 70% each year.

On large farms the farmer cannot justify the risk of losing his crop by going organic. Pesticides can not be banned until an equally efficient way is found to do their job.

You have been presented some interesting food for thought. Keep it in mind as we move on.

PESTICIDES

Name _____

Period _____

You will have 1 class period in the library to find an article on pesticides, either for or against, jot down main points of the article on this paper. Turn in at the end of class.

Article title:

Source:

Date:

Traces of DDT

LESSON 4

CONCEPT: Food additives play a very important role in our food eating habits, yet many do not want them used.

MATERIALS:
additive examples from foods lab - see following chart and book from kit for ideas
additives chart - list all the categories of additives on tagboard, and pin on the bulletin board
labels that you and the students have collected
ditto - Label Assignment
overhead projector
transparency - Reasons for Buying Organic and Natural Foods
ditto - List of Food Additives
speaker - arrange from FDA

PROCEDURE: Show the Reasons for Buying Organic and Natural Foods transparency to refresh the memory of the class for the cons concerning additives.

Additives are substances used to protect and keep food. When you think about it, much of our food preparation is now done at the factory and additives are needed to preserve them until they reach you. Here are a few more reasons people are against the use of them:

The flavor is not natural and the taste is very synthetic.
The nutritional value of foods is ruined. It is the natural nutrients that are best, not the synthetic ones, often added to food to replace the ones lost in processing.
One of the biggest concerns is the harmful effects many of the additives might have.

On the other hand the ones who are in favor of the additives feel quite differently. Most of the food products could not be processed, preserved and attractively presented without the use of various chemical additives. We now have an abundance of various food choices during all seasons, without additives we couldn't possibly.

Our lifestyle has become one of convenience, including the use of convenience foods and without additives we would have to forego this way of food preparation and variety. For example, freshed baked bread would stale in one day, cottage cheese would separate, foods with fats and oils in them would turn rancid quickly, canned fruits and vegetables would be soft and mushy and marshmallows would turn hard very quickly.

The addition of additives is many times more healthful for the consumer. A few reasons why:

- *the addition of potassium iodide to table salt prevents goiter*
- *vitamins added to food are a very good idea for a society that has a very poor diet.*

The safety of these additives is governed by the Food and Drug Administration. Test animals are given many doses in amounts that far exceed our consumption. The amount put in food is the smallest possible amount needed within the range of safety. The body could actually tolerate much more. If a drop too much was added the food would have a bad taste to the consumer.

Refer to the tagboard chart on additives for the next section.

Now that you have an idea of both sides of the fence, let's find out about the role they play in foods. The common types are:

1. *Acids, Alkalies, Buffer, and Neutralizers*
   Acids and alkalies are important as they can be used with the leavening agents in baked goods. They produce more gas and make them rise more. The tart taste of soft drinks is an acid. Buffers control the degree of acidity in soft drinks. Acid plays an important role in dairy products, too. It is a neutralizer in the making of butter. Alkalies are used in chocolate processing.

2. *Bleaching and Maturing Agents*
   These speed up the process of aging flour which improves breadmaking. Freshly milled flour is yellowish in color and makes a poor bread.

3. *Emulsifying, Stablizing and Thickening Agents*
   In baked goods emulsifying agents improve volume, uniformity and give a softer crumb to bread. Frozen desserts are improved by these, too. In candy they improve keeping quality. Stabilizers and Thickeners give the smoothness and uniformity of color and flavor to confectioneries, ice cream, chocolate milk, and artificially sweetened beverages.

4. *Flavoring Materials*
   These represent the largest group of additives. Many natural flavors have been used, but now industry has developed synthetic flavors which resemble the natural and have better stability.

5. *Food colors*
   Both natural and synthetic are used extensively. These increase the acceptability and attractiveness of products. They do not improve the eating quality, only the appearance. Color if misused, can conceal damage or inferiority, or make a product seem better than it is.

6. *Nutrient Supplements*
   Vitamins and minerals added to foods to improve nutritive value or replace those lost during processing.

7. *Preservatives*
   Added to prevent growth of bacteria.

8. *Non-nutritive sweeteners*
   Sugar substitutes.

Show additive examples you have collected and have class try to guess the use of the additives in the food. i.e. emulsifier, flavoring, etc.

Pass out the Label Assignment ditto. Go over the directions very carefully with the class and have them staple the label to the paper. If you have trouble finding the information, refer to Chemicals Used in Food Processing. Be sure to include a ditto of List of Food Additives with each ditto.

LIST OF ADDITIVES

ADDITIVE	USE
agar-agar	stabilize and thicken
amyl acetate	used in flavoring
ascorbyl palmitate	preservative
benzaldthyde	flavoring
benzoic acid	inhibits mold
benzoyl peroxide	bleaching agent
butylated hydroxyanisole (BHA)	preservative
butylated hydroxytoluene (BHT)	preservative
calcium chloride	firming agents for canned fruits and vegetables
calcium hypo-chlorite	sterilizing agent
calcium salt	firming agent for canned fruits and vegetables
calcium stearate	anticaking agent for table salt
carbon dioxide	used in pressure packed foods to produce pressure, ie. whipped cream
carvone	used in flavoring
chlortetracycline	preservation
citric acid	tart taste in soft drinks and cheese
cyanoduhioidocarbonate	inhibits bacteria
diglyerides	keep food from separating
ethyl acetate	used in flavorings
ethyl butyrate	used in flavorings
gelatins	stabilize and thicken
gum benzoin	give candy a shiny coating
humectants	prevents candy from drying out
lecithin	keeps food from separating
magnesium carbonate	anti-caking agent in table salt
malic acid	tart taste in soft drinks and cheese
methyl-p-hydroxy-benzate	preservative
monocalcium phosphate	used with leavening agents in baked goods, rises higher
monoglycerides	keeps foods from separating
monosodiumglutamate (MSG)	flavor
nitrogen	used in pressure packed foods to produce pressure, ie. whipped cream

ADDITIVE	USE
nitrous oxide	used in pressure packed foods to produce pressure, ie. whipped cream
nordihydrogaiaretic	preservative
oleoresins	flavoring
pectins	artificial sweetener
polyoxyethylene fatty esters	keeps food from separating
potassium acid tartrate	used with leavening agents in baked goods, rises higher
potassium bromide	preservative
potassium n-methyldithio-carbamate	bacteria inhibiter
propyl gallate	preservative
propyl-p-hydroxy-benzoate	preservative
protein hydroesates	flavoring
sodium acetate	preservative
sodium alginate	artificial sweetener
sodium acid pyrophosphate	used with leavening agents of baked goods, rises higher
sodium benzoate	preservative
sodium aluminum phosphate	used with leavening agents in baked books, rises higher
sodium diacetate	inhibits mold
sodium hypo-chlorite	preservative
sodium erlythorbate	preserves color of foods
sodium propionate	inhibits mold
sodium nitrate	keeps color in cured meats
sodium nitrite	same as above
sorbitan	keeps food from separating
sulfur dioxide	preservative
tannin	removes mineral traces from vinegar and beverages
tartaric acid	tart taste to soft drinks and cheese
tartic acid	used with leavening agents of baked goods, rises higher
tricalcium phosphate	anti-caking agents in table salt
vegetable gums	stabilize and thicken

ADDITIVE ASSIGNMENT

Name _____

Period _____

Most of the foods we eat contain many additives, all playing important roles. Let's find out what some of them are.

Using the ditto List of Food Additives, you are to identify all the additives that are listed on the label you brought to class. Carefully read your label (don't let the long words scare you) and list only the additives in the appropriate place. The list ingredients that are food you should be able to easily identify. Look up the use of the additives on the ditto, if you have trouble finding information the teacher has some more information. Staple your label to the paper before turning it in.

ADDITIVE NAMES	USE

LESSON 5

CONCEPT: There are no government standards that govern natural and organic foods.

MATERIALS: None

PROCEDURE: *Natural and organic foods have been increasingly popular only within the last few years. Most of the food we eat is governed by the Federal Drug and Food Administration, which sets down standards, regulations and grades. This is protection for the consumer that the food they are eating is wholesome and fresh. Are there standards for natural foods? How about organic foods? No. There are not any federal standards stating what is or isn't organic or natural.*

This really presents problems to the consumer who wants to buy either. How can you tell if a food has or hasn't been grown with an organic fertilizer? Whether pesticides have been used? Or if additives have been added? One usually cannot tell by looking at the food. In fact, there is yet, no laboratory test which can indicate the type of fertilizer that has been used with a food. No one yet has actually proved there is any real difference between organic and inorganic food.

People are making attempts to set up standards for the growing of organic and natural foods. The Rodale Press, Inc., a publishing house devoted to the organic way of life, sells very expensive certificates to the farmer who grows organically. The ownership of the certificate does not guarantee the farmer will be a true organic farmer, however.

In the Seattle area, organic and natural food stores urge farmers to sign an affidavit (a written declaration upon oath), declaring their products were grown under the correct conditions. But many store merchants admit that in most cases they have to use their own judgement most of the time.

What it all boils down to is TRUST. There are no standards we can rely on yet. Can we rely on trust?

LESSON 6

CONCEPT: Natural and organic food costs are higher than commercial food.

MATERIALS: ditto on Cost Discovery
overhead projector
transparency - Organic Food Cost (this chart should be updated each time you use it)

PROCEDURE: *The cost of food is a very vital consideration in this day and age of rapidly rising cost. Do you have any idea of the comparison cost of natural and organic foods as compared to commercial foods? Let's look at a transparency that shows the cost of a few organic foods from the P.I., January 14, 1973.*

As you can see a number of the foods are about double in cost. For these prices, what guarantees do you have these are organic foods?

The merchants of organic and natural food stores tell us the reasons prices are so high, is the growing of these foods require so much extra effort, and because of the limited distribution of the foods.

Arrange for students to visit a Health Food Store. Take the Cost Discovery ditto with them. Students are to pick 10 foods they find, record price and tell if organic or natural, if information available. They are to visit a local grocery store and find comparable products and price them.

ORGANIC FOOD COSTS, JANUARY 1973

	ORGANIC	COMMERCIAL
Spaghetti, 8 oz.	41 cents	15 cents
Clover honey, 16 oz.	99 cents	75 cents
Peanut butter, 11 oz.	79 cents	43 cents
Grape juice, 32 oz.	$1.39	63 cents
Avocados, each	89 cents	39 cents
Squash, 1 lb.	69 cents	29 cents
Oranges, 1 lb.	36 cents	25 cents
Romaine lettuce, each	49 cents	29 cents
Walnuts, 1 lb.	79 cents	58 cents
Ground beef, 1 lb.	$1.50	75 cents

COST DISCOVERY

NAME _____

Food Item	Natural or Organic	Natural Food Store Price	Local Grocery Store Price

LESSON 7

CONCEPT: The use of typical organic and natural foods and cooking with them.

MATERIALS:
prepared bean sprouts that have been growing for four days
the prepared ingredients for Stir-Fry Bean Sprouts and Celery and Sprout Omelet
fry pan
paper plates and forks for tasting
ditto of recipe for students
dittoes of recipes you have chosen for students lab
necessary equipment and food ready for demonstration of one or two choices for lab
market orders
time plans

PROCEDURE:
What foods do you typically associate with natural and organic foods:
whole grain
stone ground wheat
bean sprouts
lentils
brown rice
soy beans
Let's take one of these foods, bean sprouts, and prepare a vegetable dish and omelet with them. Bean sprouts are very versatile and can be used in vegetables and salads and main dishes.

Before beginning the demo, if the class hasn't already guessed what was growing in the jar now is the time to tell them.

Demonstrate bean sprout dishes, class taste.

Have students decide on buffet menus, one for each lab day, each group prepare one of the dishes. Make out market orders and unit plans and staple dittoed recipes with them.

Lab Day

The group cooking will do their preparation work on the first day and finish cooking on the second day. The other group will do the following assignment.

RECIPES

Stir-Fry Bean Sprouts and Celery

4 c. (1 lb.) bean sprouts
2 to 4 celery stalks
2 T. oil
1/2 tsp. salt
1 T. soy sauce
1.4 c. chicken broth or bouillon

Wash and drain the bean sprouts. Wash then shred the celery. Heat oil in fry pan, add celery and stir-fry 1 minute. Add bean sprouts and stir-fry 1 minute more. Add salt, soy, and broth. Heat quickly, then cook 2 to 3 minutes over medium heat. 4 to 6 servings.

Sprout Omelet

4 eggs, lightly beaten
2 T water
salt and pepper to taste
1½ T butter
1 C bean sprouts
1 T chopped parsley

Combine eggs, water, salt and pepper. Heat butter in omelet pan or substitute pan. Pour in egg mixture and immediately stir until mixture starts to set. Continue to cook until bottom is golden. Sprinkle with sprouts and parsley, fold over and tip onto a warm platter. 2 servings

Step-by-step Bean Sprouts

1. Take a large, wide mouth quart jar and with a nail or pick, carefully punch holes in the cover.

2. Measure 1/4 or 1/3 c. mung beans. Wash beans thoroughly and sort out discolored ones.

3. Place beans in the jar and cover them well with water. Let soak overnight.

4. The next morning drain off the water by turning jar upside down. Shake beans to side of the jar and place jar on its side in a cupboard you frequently open.

5. Each day rinse beans at least twice and watch them grow. In about four days the bean sprouts will be over one inch long and ready to use.

Lab Assignment #1

Name _____

Period _____

To obtain the most nutrition from an organic or natural food most feel the food should be eaten in a raw state. We must cook some foods, however, as they are not palatable in the raw state. Using the texts, and cookbooks in the classroom, you are to answer the following questions. In order to conserve as many nutrients as possible foods must be cooked with care, as is the case with any food. First let's take fruits and vegetables.

Write out three principles to remember when cooking fruits and vegetables:

1.

2.

3.

Next let's consider meat cookery.

1. It is best to cook most meats at _____ temperatures.
2. At _____ temperatures, meat toughens as the protein hardens.
3. What is meant by moist heat cooking?

4. What is meant by dry heat cooking?

Conservation of vegetable water, or juices left from meat cooking.

Describe three things that could be done with the above.

1.

2.

3.

Take a look at raw vegetables, list 10 that could be served raw with a meal and tell how you would serve them.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

List 10 green vegetables that could be used in a tossed salad.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Lab Assignment #2

Name _____

Period _____

You have been presented many ideas about natural and organic foods and ideas that present both arguments - pro and con. Now you are to write a convincing argument for someone who is undecided about just how they feel about the pros and cons of these foods. You are to present an argument that will bring them to your way of thinking. Keep in mind all the information that has been presented to you. When possible, state facts, not just feelings.

Write it in the provided area.

ANSWERS TO LAB. #1

Principles for cooking fruits and vegetables

1. use as short a time as possible
2. use as little water as possible
3. cover pan and bring to boil quickly

Meat cookery

1. low
2. high
3. moist heat cooking - meat cooked in liquid at a low temperature for long period of time
4. dry heat cooking - tender cuts of meat cooked for a short period of time without a liquid, and under or above direct heat, like broiling, pan frying, etc.

Conservation of vegetable waster and meat juices

1. use as a soup stock
2. use vegetable water in making of gravy
3. use in stews
4. use meat juices as au juice
5. use vegetable water in making of casseroles and sauces
6. meat drippings could be used in casseroles

NATURAL AND ORGANIC FOOD STORES

South End

Ames Nutrition - Renton Shopping Center

Burien Special Foods - 216 S. W. 152nd Seattle, 243-6111
also have a lending cookbook service

Groff's Nutrition - Southcenter, 246-6960

Cook's Nutrition - 125 Airport Way, Renton, 226-7757

West Seattle Nutrition - 4455 California Ave. S. W., Seattle

North End

The Grainery, Inc - 3665 Stoneway N., Seattle, 632-4711

Pilgrim's Natural Foods - 4217 University Way NE, Seattle, 634-3430

Puget Consumers Coop, Inc. - 2261 N. E. 65th, Seattle, 522-7888

Seattle

Pike Place Natural Foods - Pike Place Market, 623-2231

Western Natural Foods - 1523 4th Ave., 624-0788

RESOURCES

The two books included in the packet:

Chemicals Used in Food Processing, Publication #1274, National Academy of Science, 2101 Constitution Court, Washington, D.C. 20418 1965

Cooking with Gourmet Grains, Stone-Buhr Milling Co., 4052 28th Ave. S. W. Seattle, WA 98126

Resource people used:

Mrs. Joanne Emrick, Consumer Specialist, FDA, Seattle, 442-5258

Pamphlets used:

Clipper Magazine, February 1972

Environmental Action, April 1973

Pesticides and Your Environment, 1972, National Wildlife Association

Information from Consumer Convention, March 1973 held in Seattle, and many pamphlets and clippings sent to me by Mrs. Emrick, FDA

Magazines used:

Coed, January 1973

Forecast, February 1972

Post Intelligencer, January 14, 1973

Women's Day, July 1972

Books used:

Brown, Lester, and Finsterbusch, Gail, Man and His Environment: Food Harper and Row, 1972

Cailliet, Greg, Setzer, Paulette and Love, Milton, Everyman's Guide to Ecological Living, Macmillan, 1971

Killeen, Jacqueline, Ecology at Home, 101 Products Publisher, 1971

Rodale, Robert, Sane Living in a Mad World, Rodale Press, 1972

Other suggestions:

New York Times Natural Foods Cookbook, Jean Hewitt, Quadrangle Books, 1971

FDA Publication on Standards, Regulations and Grades of Foods - call local FDA office

Washington Dairy Association have good charts available for comparison of nutrients, additives, etc. - call local office

Magazines that are valuable resources: Consumer Bulletin, Prevention, Today's Health